

NTX FUTURE CITY JUNIOR COMPETITION (2019-2020) 4-5TH GRADE RULES AND PROGRAM DESCRIPTION

The North Texas Regional Future City Junior Competition is a STEAM project-based learning program for 4th-5th grades where students imagine, research and model a solution to a real-world problem in a city 100 years in the future. It is an abbreviated version of the award-winning Future City Competition for middle-schoolers. Components of the Junior Program include a research essay and a physical model of the city's solution to the annual challenge.



2019-2020 Challenge: *Clean Water: Tap into Tomorrow*. Choose a threat to your city's water supply and design a resilient system to maintain a reliable supply of clean drinking water.

Rules and description of the project scope follow. For complete details, consult the NTX Junior Team Center: http://www.dfwfuturecity.org/team_junior.html.

REGISTRATION:

Schools and youth organizations with 4-5th grade students may register through 31 October by completing the form at: <https://www.dfwfuturecity.org/NorthTX/TeachBin/Teacher/Enroll>. There is no registration fee for the Junior Competition.

TEAMS:

The students will work in teams. Teams consist of three 4-5 grade students, an educator and an engineer-mentor. (For suggestions on finding mentors, see: https://www.dfwfuturecity.org/team_menfind.html.)

- Students must be from the same organization, but not necessarily the same class or grade.
- Organizations with large groups may either
 - Enter multiple teams (there will be a TBA limit to the number of teams and models shown at UTA), or
 - Work as a class or large group prior to the model showing, but must select the three students (one team) that will represent the group at the competition.

DELIVERABLE #1

RESEARCH ESSAY: TAP INTO TOMORROW

This component will describe the team's solution to the annual challenge: Design a resilient urban water system to maintain a reliable supply of clean drinking water. Download the Essay Requirements from the Junior Team Center (http://www.dfwfuturecity.org/team_junior.html) for a complete description. Briefly, the essay should:

- Introduce the team's city – at least 100 years in the future.
- Choose a threat and describe its impact on the water supply system – how is it likely to be disrupted and the effect on the citizens, in particular vulnerable population groups.
- Include a detailed account of one solution to make the water supply system resilient.

- Contain no more than 1000 words.

Refer to the Essay Requirements document for a Suggested Outline and the FC Junior Essay rubric.

The essay is due 29 November 2019. Late submissions will be accepted (with penalty points deducted) through 20 December 2019. Submit the essay in electronic form, in a .doc file format, by uploading to the Junior Team Center (http://www.dfwfuturecity.org/team_junior.html).

DELIVERABLE #2

PHYSICAL MODEL:

Download the requirements for this component in the Model Requirements document in the Junior Team Center (http://www.dfwfuturecity.org/team_junior.html). Briefly, the Physical Model should:

- Be built to scale (scale chosen by the team).
- Illustrate the team's concept of their future city.
- Be focused on demonstrating the solution to the challenge: Clean Water: Tap into Tomorrow.
- Not exceed \$50 in cost of materials. The total value of the materials used must be reported on the Competition Expense form.
- Be no larger than 25" (w) x 36" (l) x 20" (h).

The FC Junior Model rubric is included in the Model Requirements document.

Model Judging:

- The model will be judged using the Junior Model rubric.
- Judging will take place at UTA on the same date as the NTX Regional Competition (tentatively 25 January 2020).
- Team of students will stand with their model during judging to answer any questions and *briefly* explain their research solution (resilient power). No formal presentation is required or expected.
- Judges will spend approximately 5 minutes with each model display.
- Adults (educators, mentors) may observe, but are not allowed to participate.

PROGRAM HANDBOOK:

The Future City Competition program handbook has been written for the middle-school program (download from the website: <http://futurecity.org/resources>) and is a valuable guide for the teaching/leading the project. The Junior program has been simplified somewhat from the complete middle-school program described in the handbook. Specifically, for the Junior Competition:

1. The Project Plan and SimCity deliverables are NOT included in the Junior program.
2. There will be no formal oral City Presentation. However, the student team-members will have the opportunity to talk to the judges. See Model Judging information.
3. The Essay is shortened such that it need not include a detailed description of the city and the maximum word count is 1000.
4. The Model, likewise, is simplified to be smaller in size, focused primarily on demonstrating the annual theme, and to cost no more than \$50.

Keeping in mind these changes from the middle-school program, the Program Handbook contains elements that might be useful for leading the Junior program:

1. The following sections are helpful in getting started:
 - a. Preparing to Lead (p. 9-11)
 - b. Introduce Engineering and The Engineering Design Process (p. 12-16)
 - c. Activities on Teambuilding and Brainstorming (website resources)
2. You might also find these activities useful:
 - a. Project planning - setting goals and monitoring progress
 - b. City planning - learning the elements of what makes a good city beyond the basic question posed by the annual challenge.

REQUIRED FORMS:

1. Honor Statement
2. Media Waiver
3. City Model Expense form (max expense = \$50)
4. Model ID card (attached to model)

PRIZES:

- Future City Competition Junior will provide prizes for Best Essay, Best Model, and Best Overall Junior Team. Depending on sponsorship, we will also give out Special Awards.
- Prizes will consist of a cash award, gift cards for the students and a plaque/certificate.
- Prizes will be presented during the Future City NTX Regional Awards Ceremony later the same day.

OTHER RULES:

- Participants will comply with the basic rules of the Future City Competition program as laid out in the handbook and as modified herein.
- Deadlines will not be extended. Teams making submittals after the deadlines will receive penalty points.
- Any conflicts will be resolved locally. There is no appeal.
- The judges' decisions are final.
- Prizes are not transferable or exchangeable.